NATURAL HISTORY MISCELLANY.

BOTANY.

GEOGRAPHY OF PINUS PUNGENS.---In a note to a paper on "Variations in *Pinus* and *Taxodium*," recently published by the Philadelphia Academy of Natural Sciences, I have given another locality for them: "on the hills north of Harrisburg, along the Susquehanna," and they are probably abundant through the center of the State.—T. MEEHAN.

ZOÖLOGY.

DOES WITH HORNS.—The doe with horns, mentioned in the July number of the NATURALIST, must have been a very fine specimen, as well as a very marked example of the imperfect development of sex which sometimes occurs, and has been found by naturalists in all branches of the animal kingdom. I saw a few years ago a doe with a pair of horns; it was about eighteen months old, and was in an enclosure on Long Island. In the same enclosure was a buck of the same age; the horns of both animals were so nearly alike that they could not have been told apart. I have heard of others that have been killed in the Adirondacks, the horns being like those of the buck of the second or third year. They are known there as barren does.

The inability to produce young, however, seems to depend on the amount of masculine nature inherited, as the doe that I saw did have one fawn.

Martin says: "In domestic cattle, where the cow produces twins, one being a male and the other a female, the female calf is very apt to be barren, and the external form to resemble that of the ox. A calf of this kind is called a *free martin*, the origin of which name is however obscure. These calves on being slaughtered have been found to be hermaphrodites."

I have seen a peahen that, after it had ceased laying, grew a pair of spurs. Darwin says: "It is well known that a large number of female birds, such as fowls, various pheasants, partridges, peahens, ducks, etc., when old or diseased, or when operated on, partly assume the secondary male character of their species." "A duck ten years old has been known to assume both the perfect winter and summer plumage of the drake." "Waterton mentions the case of a hen that had ceased laying, and had assumed the plumage, voice, spurs, and warlike disposition of the cock; thus every character of the male must have lain dormant in this hen as long as her ovaria continued to act."

The reindeer and caraboo are the only two species of the genus Cer-

vus, the females of which always have horns, though smaller than those of the male. Many instances are mentioned, however, of exceptions to this rule. Todd says: "Among the females of the lower animals a similar approach to the male character in the general system not unfrequently shows itself as an effect both of disease and malformation of the sexual organs, and also in consequence of the cessation of the powers of reproduction in the course of advanced age. Female deer are sometimes observed to become provided, at puberty, with the horns of the stag, and such animals are generally observed to be barren, probably in consequence either of a congenital or acquired morbid condition of their ovaries or other reproductive organs. This occurs sometimes also in old age, and, according to Burdach, when the doe has been kept from the male, and at the same time furnished with abundant nourishment.

"In a kind mentioned by Mr. Hay, and which, he believed, had never produced any young, one of the ovaries, on dissection after death, was found to be scirrhous. The animal had one horn resembling that of a three years' old stag, on the same side with the diseased ovary; there was no horn on the opposite side. "In a number of instances where female pheasants had assumed more or less the plumage of the male, the ovaries, on dissection, were found to be diseased." "On the other hand, with male animals it is notorious, that the secondary sexual characters of the male are more or less completely lost when they are subjected to castration." "If this operation is performed on the cock, he does not crow again; the comb, wattles and spurs, do not grow to their full size. The capon takes to sitting on eggs. So it is with hornless cattle, some of which, as they grow old, acquire small horns. "Why in the female, when her ovaria becomes diseased or fail to act, certain masculine gemmules become developed, we do not clearly know any more than why, when a young bull is castrated, his horns continue to grow until they almost resemble those of the cow; or why when a stag is castrated the gemmules derived from the antlers of his progenitors quite fail to be developed."

I have had an opportunity of studying four cases of this kind; one that of a *Cervus Virginianus* castrated when young, has never developed a perfect pair of horns, the first spike of the deer of eighteen months old has never been shed, the original velvet remaining upon it, and a succession of points have been thrown out from the base until the appearance has become like that of two rosettes on his head. Two Wapiti deer that were castrated in September, several years ago, while their horns were full, cast their horns two weeks after the operation, when they would not otherwise have cast them until January or February. The horns immediately began to grow and have never been cast, the velvet has remained on ever since, while the form is very irregular and imperfect. Mr. J. G. Bell informs me that some years since he found a *doe* with horns as large as those of a buck of two years.

I have in my collection the skull and horns of a Wapiti that had been

castrated. They are in the velvet, are heavy and thick, and the branches instead of being pointed are palmated, the palmations being seven inches broad on some of the branches. It is to be hoped, that as public parks and zoölogical collections are being made throughout the country, more attention will be paid to these subjects in this country, and better opportunities afforded to the naturalist than can be had in the woods while hunting. — W. J. HAYS.

THE EGG OF THE GREAT AUK (*Alca impennis*).—Dr. Baldamus announces as the result of recent investigations, that but four eggs of this species are to be found in Germany (one belonging to the Grand Duke of Oldenburg, one to Count Rödern in Breslau, and two to the Royal Museum in Dresden), none in France, two in the Copenhagen Museum, and about sixteen in England, making twenty-two. The Academy of Natural Sciences in Philadelphia had two specimens, but, with praiseworthy liberality, has recently presented one to the Smithsonian Institution. So far as positively known, therefore, less than thirty specimens of the egg of this probably extinct species, are now preserved. The exact number of preparations of the bird itself we are not at present prepared to give. Only three, however, are to be found in America, one each in the Museums of the Academy of Natural Sciences of Philadelphia, of Vassar College, Poughkeepsie, and of the Smithsonian Institution. Of the Skeletons only two are known, one in the British Museum, and the other in the Cambridge Museum of Comparative Zoölogy. Detached bones are, however, found in more or less abundance in the ancient shellheaps of Denmark and other parts of Europe, and of the New England and Nova Scotian Coasts.***

THE COW BUNTING.—Mr. Martin Trippe, in his article on the Cow Bunting, (*Melothrus pecoris*) in the August number of the NATURALIST; mentions his having heard of but two instances where this bird deposited more than two eggs in a single nest.

On the 15th of May, 1868, I found a nest of the White Crowned Sparrow (*Zonotrichia leucophrys*), of two stories; containing, in the under, a single egg of the Cow Bunting, and in the upper, two more of the same, together with three of the rightful owners. These were being sat upon at the time by the female bird, and on blowing proved to be pretty well advanced in their incubation. Again, this last spring, in the month of May, I found a common Pewee Flycatcher's nest, containing, with three of its own, also three of the Cow Bunting's eggs. One of these last was so forced down into the bottom of the nest as to be almost covered up. This nest I have now in my collection. — H. S. KEDNEY, *Potsdam, N. Y.*

THE HOUSE FLY. — Years ago I had hundreds of house flies. I think that the perpetuity of the race is provided for in the larval and pupa state over winter, and not by hibernating as adult flies. I have seen the greatest abundance of pupæ late in autumn, when I am confident they did not then transform. — H. SHIMER.

A SINGING MOUSE. — Within the last year I have seen several items in the papers, to the effect that "singing mice" had been caught in different parts of the country, and as the existence of such musicians seems to excite interest, I propose to give an account of one that lived with us about two years ago.

It was in September, 1866, at Newburgh, N. Y., I had noticed in one of the rooms occupied by my family, for several evenings, a fine, chirping sound, so persistent and monotonous as to be annoying, and had supposed it to proceed from one of the small cicadæ that, at that season, had full possession of the shade trees that surrounded the house. Several times I endeavored to find the insect, but ineffectually, the noise seeming to come from different parts of the room, sometimes high in the wall, sometimes on the floor, and ceasing altogether while I was endeavoring to localize it, only to break out afresh the moment I resumed my seat and the room was quiet. This continued more or less for a week, without my being able to learn whence the sound proceeded. At last it invaded my bedroom, which adjoined the other, and for an hour or two together, on one particular night, made sleep impossible. It chanced next morning as I was dressing, the same note issued from an enclosed verandah, the doors of which were open. It struck me as odd that an insect, such as I supposed the musician to be, should sing by daylight. Upon the floor of the verandah were several trunks, and I traced the sound from one to another, till, on lifting gently the lower edge of the canvas cover of one of them, I saw the tail of a mouse protruding. He scampered away to another hiding place, from which forthwith the same notes came. I left the mouse in peace that day, but devised means to entrap him the following night. And sure enough, somewhere about midnight, I waked to hear the same continuous chirping, and presently heard the click of the trap. In the morning the children were greatly excited, and soon found an old dormouse cage, brought from London years ago, made like a squirrel cage with wheel and sleeping box, but all on a scale suitable for mice or dormice, which are alike feeble folks. The captive seemed pleased with his quarters, and soon manifested his content at the quality and regularity of his rations, by singing his unvarying tune at all hours. He warbled after the manner of a minute bird, the throat swelling and vibrating, the mouth closed or nearly so, and the lips in incessant rapid motion, like those of a rabbit. There was nothing like the imitation of any particular bird. We might possibly have fancied otherwise if there had ever been a canary in the house. Nor was there anything that could strictly be called a song. The sound was thin, sharp, but slightly varied, and altogether more like that emitted by an insect. This mouse soon became very tame and familiar with the presence of any of the family. After a few days he became much less restless than at first, was visibly getting fat and lazy, would not take a run in the wheel unless driven to it, and spent a good part of the day sleeping in his little room. In this he hoarded his food in such quantity as to seem to the children

uncomfortable, and therefore he occasionally had to be ejected while his bedding was changed and all made clean. At this treatment he would manifest his displeasure by flying across the cage into the wheel, which he would make spin, emitting all the while his peculiar note with great shrillness and rapidity. And when admitted again after the house clearing, he would be in a state of exasperation, scolding incessantly while busy rearranging things to suit his own mouse ideas. Several times he escaped from the cage, but was as often retaken, as his noise always betrayed him, until at last, after he had been with us six weeks, he escaped once too often and we saw him no more. We supposed he had found his way through the open door into the garden. This mouse was not the common house-mouse, but of a species which frequents barns or lives in the fields, and which was common in our own barn. It was of a light brown, with a whitish belly. Its nose was sharper than that of the house-mouse. On mentioning the subject to a friend, I was told that, some years ago, a house in Catskill, N. Y., was greatly infested with "singing mice," and that it was well known and talked of in the village.

We know so little of the habits of the small nocturnal animals, that it may be possible that these field-mice possess more or less of the musical faculty. The notes of the subject of this paper would pass for the chirping of a cricket, or small grasshopper if heard in the open air, or even in a barn. If heard in a room they would have a certain distinctness, but could not properly be likened to anything so decided and modulated as the song of a bird.

I have looked in vain for any intelligent account of the habits of our field-mice in works of Natural History. In Jesse's "Country Life," London, page 350, is mentioned as follows: "I have been twice to hear the singing mouse. Its song is plaintive, sweet and continuous, and evidently proceeds from the throat. The notes are those of a canary bird, and on questioning the man, I found that one of these birds had been kept in the room in which the mouse was trapped?"—W. H. EDWARDS.

NATURAL SELECTION, A MODERN INSTANCE.—I am a frequenter of the Adirondacks, having hunted there for twenty-one years. The common American Deer (*Cervus Virginianus*) abounds there. About fourteen years ago, as nearly as I can remember, I first began to hear of "Spike-horn Bucks." The stories about them multiplied, and they evidently became more and more common from year to year. About five years ago I shot one of these animals, a large buck with spike-horns, on Louis Lake. In September, 1867, I shot another, a three years old buck with spike-horns, on Cedar Lakes. These Spike-horn Bucks are now frequently shot in all that portion of the Adirondacks south of Raquette Lake. I presume the same is true north of Raquette Lake, but of this latter region I cannot speak from personal observation, having visited it only once.

The spike-horn differs greatly from the common antler of the *C. Virginianus*. It consists of a single spike, more slender than the antler, and

scarcely half so long, projecting forward from the brow, and terminating in a very sharp point. It gives a considerable advantage to its possessor over the common buck. Besides enabling him to run more swiftly through the thick woods and underbrush (every hunter knows that does and yearling bucks run much more rapidly than the large bucks when armed with their cumbrous antlers), the spike-horn is a more effective weapon than the common antler. With this advantage the Spike-horn Bucks are gaining upon the common bucks, and may, in time, entirely supercede them in the Adirondacks. Undoubtedly the first Spike-horn Buck was merely an accidental freak of nature. But his spike-horns gave him an advantage, and enabled him to propagate his peculiarity. His descendants, having a like advantage, have propagated the peculiarity in a constantly increasing ratio, till they are slowly crowding the Antlered Deer from the region they inhabit.

Suppose this had begun several hundred years ago, and the process had been completed before the first white man penetrated the wilds of northern New York, the first naturalist visiting the region would have found of deer, besides the Moose and Caribou, only the Spike-horn. Would he have hesitated to have pronounced it a distinct species, and to have named it as such? And would not naturalists everywhere have followed him? Yet the Spike-horn Buck is but an accidental variety of the *C. Virginianus*. Is it probable that the Black-tailed Deer is a more distinct species? How many changes as great as that from the common Deer to the Spike-horn Buck would be necessary in order to produce an animal as different as the Elk, or even the Moose?—ADIRONDACK.

"LILIES OF THE ROCKS."—An article in the August number of the NATURALIST entitled "The Lilies of the Fields, of the Rocks and of the Clouds," contains statements which show the author to have misconceived some very plain zoölogical facts. I allude to his assuming that the hexagonal form of the "microscopic blocks" which constitute a layer of the retina of the eye; and the similar outline of plates of fossil crinoids, are facts which illustrate a natural law similar to that which governs the crystalization of snow-flakes and of certain mineral substances, and which he claims the ability to explain by a new theory of his own.

With no reference to his theory, and no desire to criticise the author unjustly, I merely wish to state that zoölogists have long had what is to them a sufficient explanation of the cause of the forms assumed by those parts of the "animal frame" referred to by him in the article just mentioned. They believe that the normal form of those microscopic bodies which enter into the structure of the retina of the eye is spherical, and that they receive their hexagonal outline by impinging against each other in their crowded condition. So also the plates of all plated Radiates receive their polygonal outlines from the same cause. Their normal outline is circular and undivided, evidence of which may be seen in the inner circular lines upon the very figures of a plate of *Archæocidaris* which he reproduces from Hall, and which by the way is not a crinoid. These

plates commence calcification within the skin of the young Radiate as circular grains, and increase at their periphery until they impinge against contiguous plates; the number of angles they may have when fully grown being determined by the number of other plates they impinge against. The plate he figures happens to have six, but many others upon the same individual had a different number and their angles were often unequal in the same plate. The hexagonal outline of the microscopic bodies in the retina is uniform in all because they are uniform in size and consistence. The plates of Radiates are not uniform because their points of calcification are usually located at unequal distances. By this it will be seen that the number of angles any plate receives is essentially accidental and bears no relation whatever to the fundamental plan upon which the animal is constructed, which is that of five rays and not six, the number necessary to make it harmonize with the crystalline structure of snow-flakes, etc. — ZOÖLOGICUS.

SAGACITY OF THE PURPLE MARTIN. — In the spring of 1868, a young friend of mine in this city desiring to obtain eggs of the Purple Martin, constructed a nesting-box and hung it out of the window. This box had a hole on the outside for the entrance of the birds, and a hole on the inside through which to reach the hand and remove the eggs. The birds at once appropriated the box, and he succeeded in procuring specimens of the eggs.

This spring (1869) the birds again built in the box, and having secured his eggs, my friend concluded to preserve a specimen of the birds. He reached through the back hole in the box and seized one of the birds, and killed and mounted it. The mate was absent for a day or two, when it returned with a companion, and both birds built a mud wall, shutting up the back hole into the box from which a bird had been taken, and then went on and raised a brood of young. — D. D. HUGHES.

THE CAPTURE OF THE CENTRONYX BAIRDII AT IPSWICH. — On Dec. 4th, 1868, I shot a sparrow that was new to me, on the sandhills at Ipswich. Through the kindness of Prof. S. F. Baird, of the Smithsonian Institution, to whom I sent it for comparison with the *only extant specimen* of the *Centronyx Bairdii* (which is owned by him), it has been proved identical with that collected by Audubon in 1843, on the banks of the Yellowstone River, in the far West.

My specimen differs somewhat in size and general coloration from Prof. Baird's. A detailed description, and the comparative measurements of the two specimens, will be given in a work about to be published, entitled "A Guide to Naturalists in collecting and preserving objects of Natural History," which will also contain a complete list of the birds of Eastern Massachusetts, with critical notes and remarks relative to the localities in which some of the rarer species occur. A life-sized engraving of the *Centronyx* captured at Ipswich will also be given.

I was much interested in a discovery that I made relative to the length

of the claws of the Mud-turtle (*Chrysemys picta* Gray) differing in the sexes. I have examined a large number and found in every case that the claws of the males on the front feet are nearly *twice as long* as those of the female. If we take into consideration the manner in which these animals copulate the reason of this peculiar elongation of the claws of the male is obvious. — C. J. MAYNARD.

PROLIFIC SNAKES. — Various accounts of prolific snakes, from Lancaster County, have come to me during the present season. On the 6th of August a female snake, *Heterodon platyrhinus*, commonly known in this locality as the "Blower," or "Blowing Viper," was killed in Martic Township. From a wound in her side, over one hundred young snakes, from six to eight inches in length, came forth, all very active, all blowing, and flattening their bodies, as is common in the adult individuals of this species. Sixty-three of these young snakes were brought to me in a bottle of alcohol, thirteen were too much lacerated to make good specimens, and the remainder made their escape before they could be secured. We *know* this species to be oviparous. The question now arises again, "Do female snakes, in certain contingencies, swallow their young?" as has so often been confidently asserted, and as often and as strenuously denied. Mr. Lehman, an intelligent farmer, who was present at the killing, and who brought me the specimens, says that they seemed to issue from an abdominal sack, which was ruptured in the act of killing. An opinion obtains in some quarters, that the same species, under certain circumstances, may be either oviparous or viviparous, or "ovoviviparous," as it is sometimes called. — S. S. RATHVON, Lancaster, Pa.

THE HALIOTIS OR PEARLY EAR SHELL.—In an article, with the above title, in the July number of the NATURALIST, referring to the geographical distribution of the Haliotides, I have stated as a remarkable fact, that although several species are found upon the West coast of North America, not a single species had been found upon the East coast of either North or South America. In the latter part of August, upon the occasion of a brief visit to the Museum of Comparative Zoölogy at Cambridge, I was kindly shown by Count Portales, among other material, a specimen of Haliotis (some one and one-half inches long) dredged, *living*, by him in the Gulf Stream between Florida and Cuba; this is the first instance of the occurrence of the Haliotis upon the Eastern side of the American Continents. — R. E. C. STEARNS.

COW DEVOURING THE PLACENTA. — In the June number of the NATURALIST, in the Scandinavian *compte rendu*, some investigations in regard to animals devouring their after-birth are referred to as novel and interesting. If this be the case, I suppose individual testimony to the same effect may be worth something, and I write to say that I once knew a cow to devour her after-birth, at least so much of it as she was permitted to eat. I have also known cats to go a step farther, and devour the newborn litter. — P.

THE WORM-EATING WARBLER.—In looking over the description of the Worm-eating Warbler (*Helmitherus vermivorus*), in the "Birds of New England" by Mr. Samuels, I see he describes it as nesting in bushes from four to nine feet from the ground, and making its nest with the blossoms of hickory and chestnut trees. I should like to know if these are the usual habits of this bird.

On the 6th of June, 1869, I found a nest of this species containing five eggs. It was placed in a hollow on the ground much like the nest of the Oven bird (*Seirurus aurocapillus*), and was hidden from sight by the dry leaves that lay thickly around. The nest was composed externally of dead leaves, mostly those of the beach, while the interior was prettily lined with the fine thread-like stalks of the hair moss (*Polytrichium*). Altogether it was a very neat structure, and looked to me as though the owner was habitually a ground-nester. The eggs most nearly resemble those of the White-bellied-Nuthatch (*Sitta Carolinensis*), though the markings are fewer and less distinct. So close did the female sit that I captured her without difficulty by placing my hat over the nest. — T. H. JACKSON, *Westchester, Pa.*

FALL OF SHELL-FISH IN A RAIN STORM.—Mr. John Ford exhibited to the Conchological Section, Academy of Natural Sciences, Philadelphia, specimens of *Gemma gemma*, remarkable as having fallen accompanied by rain, in a storm which occurred at Chester, Pennsylvania, on the afternoon of June 6th, 1869. The specimens were perfect, but very minute, measuring one-eighth inch in length by three-sixteenths inch in breadth. Though most of the specimens which fell were broken, yet many perfect ones were collected in various places, sheltered from the heavy rain which followed their descent. A witness of the storm, Mr. Y. S. Walter, editor of the "Delaware County Republican," assured Mr. F. that he noticed the singular character of the storm at its very commencement, and to use his own words, "it seemed like a storm within a storm." A very fine rain fell rapidly, veiled by the shells, which fell slower and with a whirling motion. Judging from the remains of animal matter attached to some of the specimens, together with the fresh appearance of the epidermis, it is highly probable that many of them were living at the moment of transition. This minute species resembles a quahaug shell, and is common on the seashore between tide marks.

NYCTALE ALBIFRONS.—I do not know whether, since the discovery made by Dr. Hoy, of Racine, Wisconsin, in regard to *Nyctale albifrons*, another of this beautiful and rare species has been taken within the limits of the United States. A few days ago a live and well plumaged specimen was captured in the centre of the city of Buffalo, by George L. Newman, Esq., of that city, and presented to the Society of Natural Sciences. I am sorry to add that the bird lived only two days in captivity, and it forms now a very valuable addition to the ornithological collections of the Society. — CHARLES S. LINDEN.

A FIDDLER-CRAB WITH TWO LARGE HANDS. — A male "Fiddler" with nearly equal hands has recently been presented to the Museum of Yale College, by Mr. W. C. Beecher, who collected it near this city. It does not appear to differ from the common *Gelasimus palustris* except in the right cheliped. The left cheliped is exactly like the larger cheliped of ordinary specimens, while the right one differs only in being a very little smaller, and in having the fingers slightly more incurved at the tips. In this character of equal chelipeds it agrees with the genus *Helœcius*. The specimen was very lively, and used both hands with equal facility. — S. I. Smith, *New Haven, Conn.*

PROCEEDINGS OF SCIENTIFIC SOCIETIES.

CHICAGO ACADEMY OF SCIENCES. *Meeting of October 12th*, 1869. — The President exhibited some implements of stone and shell, forming the surgical kit of an Apache Medicine-man, killed in a recent skirmish with United States troops. The stone implements were all of carbonate of lime cut from a beautifully striped stalagmite. Four of them apparently constituted a set of tamponers, the slender flattened ones being used for plugging wounds made by arrows, and a larger cylindrical one for gun-shot wounds. The surgery of the Apaches is based upon the idea that the chief danger of a wound is from the loss of blood, and plugging, aided by incantations, etc., constituted the whole of their resources. One of the stones is probably a charm, as it represents an animal, probably the Texas Armadillo, and it is ingeniously cut, so that the bands of color correspond to the transverse rows of scales. The shell is a large Oliva from Lower California, perforated and suspended by a string.

Dr. Stimpson gave an account of his experiments, during the last three months, upon a solution of carbolic acid as a substitute for alcohol in the preservation of wet specimens. The results had been gratifying, and promised a relief from the chief burden of expense in carrying on large zoölogical museums. He found that deliquesced crystals of the acid dissolved in forty times its bulk of water gave a fluid which equalled alcohol, in its preservative qualities, at less than one-twentieth the cost, with the additional advantage of keeping the specimen far more nearly in its original condition, as to the color, etc. And very curiously (this is, however, not enumerated among the advantages) the peculiar smell of the fresh fish is retained in specimens of trout which had been kept for several weeks in the fluid. The qualities of the substance (more properly an alcohol than an acid), which is a great enemy of all protozoic and protophytic life, depend upon its powerful action in destroying the germs associated with, if not the cause of, decomposition. In a solution of